

## WHAT IS CLAIMED IS:

## 1. A turbo decoder comprising:

a decoder for inputting data turbo-coded for correcting an error and repeatedly carrying out soft output decoding to thereby restore original data;

judging means for judging a reliability of a soft output decoding result provided by the soft output decoding from statistics of the soft output decoding result; and

controlling means for controlling an iteration number of the soft output decoding based on a judgment result of the reliability judging means.

## 2. The turbo decoder according to Claim 1:

wherein the judging means uses a mean value and a dispersion value of the soft output decoding result as the statistics for judging the reliability.

## 3. The turbo decoder according to Claim 1:

wherein the judging means uses a mean value and a minimum value of the soft output decoding result as the statistics for judging the reliability.

## 4. The turbo decoder according to Claim 1:

wherein the judging means uses a maximum value and a minimum value of the soft output decoding result as the statistics for judging the reliability.

## 5. A mobile station of a mobile communication system,

said mobile station comprising:

a radio frequency circuit for receiving a radio frequency signal of data turbo-coded for correcting an error by an antenna and outputting a received signal;

5 a receiver for outputting original data from the received signal as received data; and

a signal processor for subjecting the received data to a signal processing;

the receiver further comprising:

0 a turbo decoder for decoding the turbo-coded data constituting the received signal for outputting the received data;

the turbo decoder further comprising:

5 a decoder for inputting the turbo-coded data and repeatedly carrying out soft output decoding to thereby restore the original data;

judging means for judging a reliability of a soft output decoding result provided by the soft output decoding from statistics of the soft output decoding result; and

20 controlling means for controlling an iteration number of the soft output decoding based on a judgment result of the reliability judging means.

6. A base station of a mobile communication system, said base station comprising:

25 a radio frequency circuit for receiving a radio frequency signal of data turbo-coded for correcting an error by an antenna

and outputting a received signal;

a receiver for outputting original data from the received signal as received data; and

a station interface circuit for transmitting the received data to a communication network;

the receiver further comprising:

a turbo decoder for decoding the turbo-coded data and outputting the received data;

the turbo decoder further comprising:

a decoder for inputting the turbo-coded data constituting the received signal and repeatedly carrying out soft output decoding to thereby restore the original data;

judging means for judging a reliability of a soft output decoding result provided by the soft output decoding from statistics of the soft output decoding result; and

controlling means for controlling an iteration number of the soft output decoding based on a judgment result of the reliability determining means.